



NEWSLETTER OF THE LONDON CHAPTER,  
ONTARIO ARCHAEOLOGICAL SOCIETY

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October 1998

98-6

## THE USE OF SATELLITE IMAGING TO LOCATE ARCHAEOLOGICAL SITES IN PERU

PETER BANGARTH

Thursday, January 14th, 1999, 8 PM  
London Museum of Archaeology

For our first speaker night of 1999 we are pleased to present Peter Bangarth speaking on the use of satellite imaging in archaeological research in Peru. Peter is a recent graduate of the M.A. program in the Department of Anthropology at the University of Western Ontario and his work on satellite imaging formed the basis for his Master's thesis. The meeting will be held at **THE LONDON MUSEUM OF ARCHAEOLOGY**, 1600 Attawandaron Road (near the corner of Wonderland and Fanshawe Park Road in the northwest end of the city) at 8 PM.

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Our February speaker will be Dr. Francis Stewart, an SSHRC Post-Doctoral Fellow at the London Museum of Archaeology and the Department of Anthropology at Western. She will be speaking on February 11th on some aspect of the archaeology of the Maritime Provinces.

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#### ANNUAL RATES

Individual.....	\$15.00
Family.....	\$18.00
Institutional.....	\$21.00
Subscriber.....	\$17.00

## EXECUTIVE REPORT

Chapter President Chris Ellis reports that there will be a vote held at the March meeting on the question of discontinuing our May meeting. For various reasons the May meeting has been poorly attended over the past few years. By early May the field season has started for many of us, others attend the CAA meetings held at that time, and many students have returned home or are also in the field. All of these factors contribute to the poor attendance at our May meeting, however, we need to know how the membership feels about the possibility of discontinuing it. Please talk to members of the Executive if you have thoughts on this issue, or if you have any ideas for some sort of Spring gathering for Chapter members that might replace the May meeting.

## SOCIAL REPORT

A few loyal members attended the Chapter's Christmas party hosted by Jim Keron. There was plenty of Christmas cheer, a good time was had by all, and we thank Jim for his hospitality!

The 25th Annual Symposium of the OAS was held October 16-18 at the Woodland Cultural Centre in Brantford on the theme, "Archaeologists and First Nations". The Symposium provided a forum for a very productive dialogue between archaeologists and members of several Aboriginal communities. We are indebted to Chapter member Paul Lennox for organizing this important meeting.

Upcoming conferences of interest to OAS members include the Annual Meeting of the Society for American Archaeology to be held in Chicago from March 24-28 and the meetings of the Canadian Archaeological Association, scheduled for April 28-May 2 in Whitehorse, Yukon. For information on the SAA meetings contact LuAnn Wandsnider (402) 472-8873, and for details about the CAA conference contact Ruth Gotthardt at (867) 667-5983.

## EDITOR'S REPORT

The **KEWA** article file is looking pretty thin these days, which means that it is time once again for members to dust off those small (but important!) site reports and papers they have sitting on their shelves and send them in. This issue is number 98-6, so we have some catching up to do to round out the 1998 year with two more issues - but we need your articles to do this!

We are also in need of help with the **KEWA** production and distribution, including editing and mailing. If you have some time and expertise to contribute in this area, please contact one of the **KEWA** editors at the numbers listed on the front cover.

This month's article is a brief report on surface collected artifacts from a Late Paleo-Indian site in Haldimand County contributed by Jeff Bursey. It illustrates the substantial information that can be gained from surface investigations by making several insightful observations on the organization of stone tool technology among Late Paleo-Indian Hi Lo groups.



# **SURFACE COLLECTED ARTIFACTS FROM THE MURRAY 2 SITE (AfGx-72), A HI-LO COMPONENT NEAR CAYUGA, ONTARIO**

**J. A. Bursey**

## **INTRODUCTION**

In Ellis and Deller's 1982 study of Hi-Lo points, it was noted that the highest percentage of these points were manufactured from a distinctive white chert speculated by William Fox (1979) to outcrop in Haldimand County (Ellis and Deller 1982:7). Fox subsequently encouraged Fred Moerschfelder, an avocational archaeologist from the lower Grand River area, to undertake an archaeological survey of Haldimand County in order to locate both prehistoric quarry sites of Haldimand chert and begin documentation of the enormous density of other archaeological sites in the area (Moerschfelder 1985). While several of the sites discovered by Moerschfelder have subsequently been excavated to varying degrees (i.e. Bursey 1996; Parker 1986a, 1986b, 1997; Smith and Crawford 1997), dozens more have not been investigated since Moerschfelder's surveys and a great many have not as yet been documented. This paper is intended to briefly describe artifacts from one of these sites, Murray 2 (AfGx-72), a Hi-Lo site characterized by a high frequency of Haldimand chert artifacts. Although the artifact assemblage recovered to date from the Murray 2 site is not large, it does add to the sparse number of documented Hi-Lo sites reported in the literature for southern Ontario and allows some insights into the Late Paleo-Indian time period in the lower Grand River region.

## **SITE LOCATION AND PHYSICAL ENVIRONMENT**

The Murray 2 site is sited on a small knoll on the north side of a southern branch of Roger's Creek, approximately 3.5 kilometres west of the Grand River near Cayuga, Ontario and 14 kilometres north of the Lake Erie shore near Selkirk, Ontario. This location is well within the Haldimand Clay Plain physiographic region (Chapman and Putnam 1984:156-159), a fact which may account for the generally low frequency of archaeological excavations in the area. Less than one kilometre to the west of the site, the Onondaga escarpment exhibits some of its most prominent exposures in southern Ontario. Bois Blanc Formation limestone caps the Onondaga escarpment and exposures of Haldimand chert are plentiful. The Allan site (AfGx-50), a Haldimand chert quarry site excavated by "Bud" Parker (1986a, 1986b), was located approximately 1.5 kilometres southwest of the Murray 2 site. The excavations at Allan produced Late Paleo-Indian Hi-Lo projectile points. Surface quarries and work shops extend over one kilometre west of the escarpment although many of these sites have been, and continue to be, destroyed by a nearby active quarry.

The Murray 2 site is thus located within an archaeologically rich section of the province. In the immediate vicinity of the site, Haldimand chert, an apparently highly prized tool-stone of the late Paleo-Indian time period, could be obtained in quantity and in all likelihood this was a main focus of the site's occupants. Additionally, however, abundant food could also have been procured from the surrounding forests, Roger's Creek, Dry Lake, the Grand River and Lake Erie. All these resources,

but in particular the chert quarries, account for the large number of archaeological sites in the area.

## ARTIFACTS

To date, a total of twelve artifacts have been surface collected from the Murray 2 site, including two which mend. While the collection is not large, it is sufficient to provide some idea of the nature of the assemblage. For the purpose of organization for this paper, the artifacts will be grouped into two categories: bifaces (Figure 1) and flake tools (Figure 2).

### Bifaces

Five bifaces, all manufactured from Haldimand chert, have been recovered from the site to date. The most complete of these consists of two fragments which mend together (Figure 1, a). This artifact appears to be an early stage biface manufactured from the highly glossy and bluish variant of Haldimand chert sometimes referred to as Colbourne chert. It should be noted, however, that this variant can be found inter-bedded with the more common white variant in the nearby modern quarry.

Cortex is still present at the tip and coarser chert is present on one face, here referred to as the dorsal surface. The orientation of the cortex suggests the piece of chert which was used to produce this biface was originally oriented almost horizontally within the chert bed. Further, the presence of cortex and tabular surfaces suggest the chert piece was extracted from a primary outcrop/quarry.

Metrics for this biface include a length of 66 mm, a maximum width of 37 mm, approximately one third of the distance from the tip, and a maximum thickness of 12 mm. Overall, the biface has a relatively straight base, with the right corner broken off, and reasonably straight sides which expand out to a maximum width two thirds of the distance from the base. The tip is somewhat rounded.

The dorsal surface is partially flaked with broad expanding flake scars while the ventral surface is covered primarily by a tabular core break with only a few lateral flake scars. One of these appears to have "plunged" into a fault within the artifact and caused it to split length-wise (Figure 1, a). Natural tabular surfaces along the right edge appear to have been used as a striking platform although small, bifacial flaking scars and rounding along this edge suggest this tool may have been used as a knife and/or scraper for some time prior to being reworked. Along the left edge, flake scars up to 7 mm long overlain by shorter flake scars (<3 mm) indicate a relatively steep platform was prepared to set up the thinning of the biface. Flake scars less than 5 mm long and ending in hinge fractures across both faces of the base suggest use rather than attempts at basal thinning. Damage from hafting is also possible although the angle of the basal edge appears too wide to allow hafting.

The second biface (Figure 1, b) appears to represent what Ellis and Deller (1982:10-11) describe as a "Thinning Stage Preform". Large flake scars originating from the sides are present on both faces although on the ventral face, two flakes struck from opposite edges appear to have removed more of the mass of the biface than may have been intended as a deep concave "channel" was produced. Maximum thickness of the biface is 9 mm. Vestiges of a sinuous edge remain even though the biface



has been alternately bevelled by short, steep flake removals. The bevelling on the dorsal right edge is overlain by short flake scars which end in hinges suggesting use of this tool for heavy battering such as use as a chopper.

This biface has straight, parallel sides and a maximum width of 37 mm at the base. The tip and much of the distal blade appears to have been amputated from "end shock", possibly during thinning. Curvature near the fracture suggest the blade was beginning to round to the tip approximately 35 mm from the base. Much of the base has been lost due to an angular break and possible use wear but the remaining portions near the corners are lightly ground.

Two bifaces (Figure 1, c and d) appear to be "Completed Stage Preforms" (Ellis and Deller 1982:11). Thinning appears to be relatively complete with few flake ridges remaining. The larger of the two (Figure 1, c) measures 35 mm wide and 8 mm thick. The remaining portions of the sides appear to be relatively straight and parallel, the corners are rounded and the base is relatively straight. The left edge is flat and even, due to fine pressure flaking, while the right edge is moderately sinuous or bevelled. The blade appears to have been amputated by a bend break. Both edges bear some evidence of light use wear.

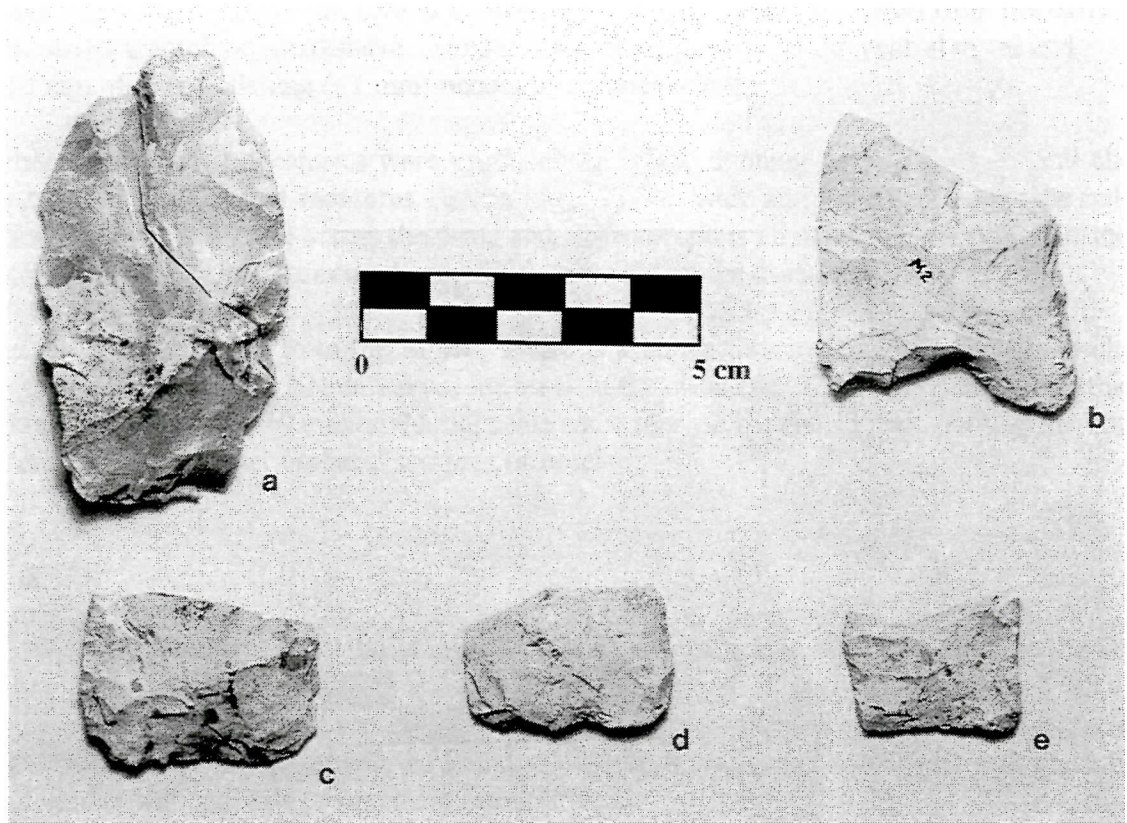
The second biface (Figure 1, d) is similar to the last in many features. Bevelling of the right edge is most prominent and appears to have been used as a platform for thinning the ventral face which is noticeably flatter than the dorsal surface. Some use wear is still evident on this edge. Maximum thickness is 7.5 mm. Again, the sides are relatively straight and parallel and the width is 30 mm. The corners are rounded and the base is relatively straight. The blade appears to have been broken by end "shock".

The final biface (Figure 1, e) appears to be the base of a finished Hi-Lo point. This point retains the "waist" and expanding sides typical of Hi-Lo points and one "ear" has been broken off. The blade edges are expanding from a base which is approximately 23 mm wide. The base is straight and lightly ground, as are the sides. The blade has been broken by a bend break but it is evident that the point was relatively thick with the remaining portion having a maximum thickness of 6 mm.

## **Flake Tools**

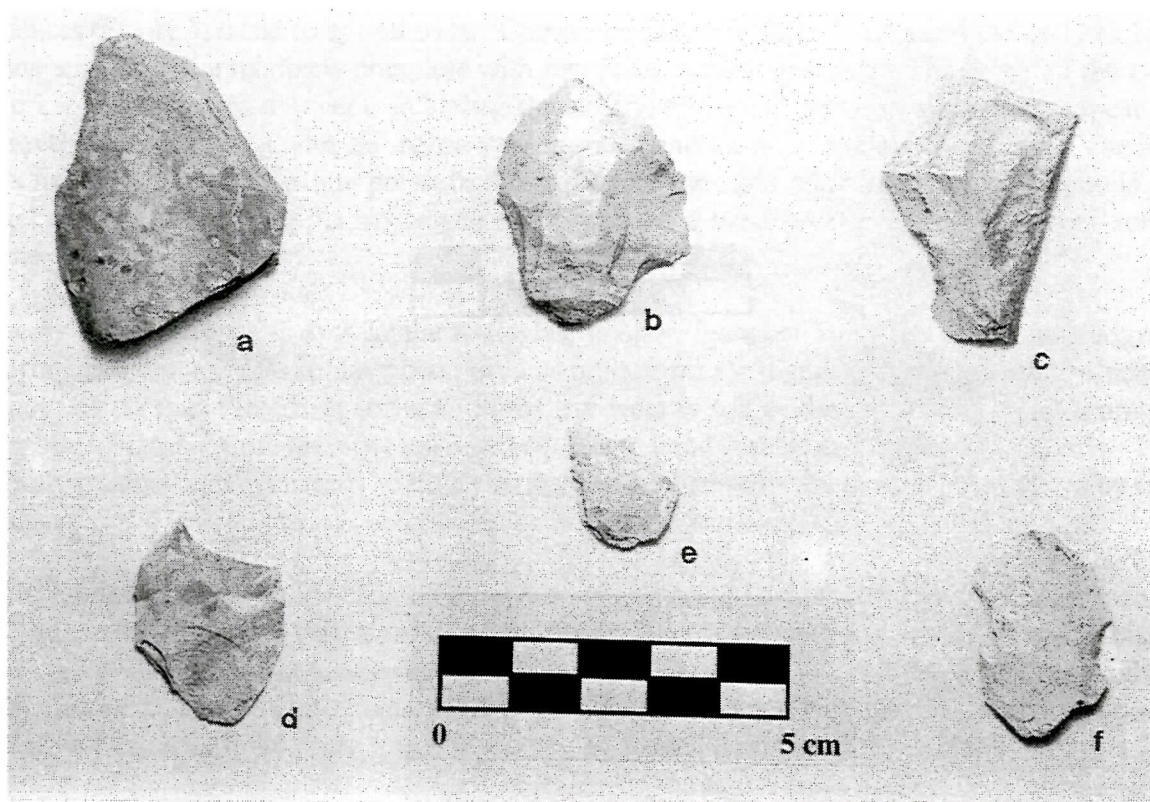
In addition to the bifaces, six flake tools were recovered from the surface of the site. All represent expedient tools in that little or no effort appears to have been expended in shaping the artifacts.

The first artifact in this category (Figure 2, a) is a primary flake of Onondaga chert. The platform and dorsal surface retain tabular surfaces indicating the artifact was recovered from a primary outcrop. Utilization is confined to 21 mm of the ventral right edge (left side of Figure 2, a), although the left side exhibits scars from two flake removals which might have been placed to provide a blunt gripping surface. The use wear consists of short flake scars (<3 mm), many terminating in step or hinge scars, and may have resulted from unifacial scraping of a dense material like wood. This artifact is 44 mm long, 33 mm wide and 14 mm thick on the left side.



**Figure 1: Murray 2 Site Bifaces**





**Figure 2: Murray 2 Site Flake Tools**

The second tool was manufactured from a primary flake of Haldimand chert (Figure 2, b). Utilization wear is present on the left side and appears to have derived from use of this artifact as a side scraper. Dimensions are a length of 35 mm, width of 27 mm and thickness of 9 mm.

The third tool is a Haldimand chert secondary decortication flake measuring 37 mm long, 24 mm wide and 9 mm thick (Figure 2, c). Utilization is present on the dorsal left side where 12 mm of short flake scars occur. This utilization is concave and may have been produced from the early stages of use as a notch or spokeshave. Similar use-wear is present on the ventral distal end where 10 mm of minute flaking (<1 mm) occurs on a concave edge.

Two other notches or spokeshaves were produced on biface thinning flakes of Haldimand chert (Figure 2, e and f). The first measures 16 mm long, 18 mm wide and 3.5 mm thick at the bulb. Utilization extends for 10 mm across the distal end. The second is 28 mm long, 19 mm wide and 4 mm thick at the bulb. Utilization on this tool is 9 mm wide on the dorsal right side.

The final artifact recovered from the Murray 2 site is a biface thinning flake of Onondaga chert (Figure 2, d). This artifact is 29 mm long to the break at the distal end, 22 mm wide and 4 mm thick. Utilization covers the distal 10 mm on the right side and 7 mm on the distal break. Both cases could be the result of use as either unifacial scrapers or notches.

## DISCUSSION

While the extant assemblage from the Murray 2 site is somewhat sparse, some insights into the lithic technology of the late Paleo-Indians is afforded by this case study. The artifacts recovered fall into two categories: bifaces and flake tools. While other tool classes known for Hi-Lo assemblages (i.e. Ellis and Deller 1982) may eventually be found at this site, it seems fair to suggest that these two gross categories will continue to dominate the assemblage.

Both the recovered flake tools and the debitage observed on the surface indicate that primary reduction was practised on the site. It is likely that at least some preliminary reduction was undertaken at nearby quarry sites with cores and/or quarry blanks transported to the Murray 2 site for further reduction and processing. Further, the presence of biface thinning flakes and broken late-stage bifaces indicate that the production of finished tools (i.e. bifaces) also occurred here.

An examination of the early-stage bifaces recovered indicate that these tools had been utilized to varying degrees prior to reduction to final tools. It is, therefore, inferred that these tools may have been in use for a considerable period of time, performing a wide variety of functions. It is possible that they served as a source of flakes for expedient tools, before being recycled into finished bifaces such as projectile points.



While the evidence is scant, it is possible to suggest that two stages of reduction occurred at this site. First, partially processed chert artifacts would have been transported from the nearby quarry site for further processing. This reduction would likely have included the production of rough bifaces which could be transported relatively easily and been used as multi-functional tools, sources of small, sharp flakes and replacements for other tools, as required.

The second type of lithic reduction which appears to have occurred at the Murray 2 site is the production of finished bifaces, probably projectile points. On the basis of two of the bifaces recovered, however, it would appear that the bifaces being reduced were curated tools which had previously been used for a variety of functions. These "worn" bifaces were then recycled with the extensive wear on the blade edges now serving as edge preparation for further flake removal.

## CONCLUSIONS

Our current understanding of Late Paleo-Indian life ways has improved considerably since Ellis and Deller (1982) described the known sites from Ontario. Bud Parker's (1986a, 1986b) excavations at the Allen site has begun to elucidate quarry site activities while excavations by others (i.e. Jackson 1998; Murray 1997; Timmins 1995; Woodley 1997) have contributed to our knowledge of settlement patterns with information ranging from single, isolated points to camps of various sizes and configurations. The Murray 2 site, as well as numerous others in the general area, have the potential to significantly add to our knowledge about late Paleo-Indian life ways in that they consist of what appear to be single component camps located near the quarry sites.

In this paper, it is proposed that Late Paleo-Indians, specifically those who are identified by the use of Hi-Lo points, used sites such as Murray 2 to process chert into a variety of tools but perhaps primarily into large "unfinished" bifaces. These bifaces were transported and used as both multi-functional tools such as choppers, knives, etc., sources of small flakes for use as expedient tools, and, if required, as preforms for more refined bifaces. Upon returning to the vicinity of the chert outcrops, these previously utilized and worn bifaces would then be recycled into "finished" bifaces once replacements were obtained. Given the wider number of uses of these "unfinished" bifaces, it is possible to suggest that the unfinished bifaces were a more important goal of quarry reduction and "finished" bifaces (i.e. Hi-Lo points) could be seen as little more than a final stage in a long and varied use-life of one subset of the stone tool inventory.

## Acknowledgements

Fred Moerschfelder first recorded the Murray 2 site and brought it to the author's attention. As always, Fred gave every assistance including loaning the artifacts and visiting the site with the author. Beth Major assisted with the photos and offered criticisms on one draft of the paper. Dr. Michael Chazan's graduate class in lithic analysis also visited the site with the author in the spring of 1998.

## REFERENCES CITED

- Bursey, J. A.  
1996 The Anderson Site (AfGx-54) and the Early and Middle Ontario Iroquoian Occupations of the Lower Grand River. *KEWA* 96-7:2-20.
- Chapman, L. J., and D. F. Putnam  
1984 *The Physiography of Southern Ontario, Third Edition*. Ontario Geological Survey, Special Volume 2.
- Ellis, C. J., and D. B. Deller  
1982 Hi-Lo Materials from Southwestern Ontario. *Ontario Archaeology* 38:3-22.
- Fox, W. A.  
1979 Southern Ontario Chert Sources. Unpublished paper presented at the 11th Annual meeting of the Canadian Archaeological Association, Quebec City, Quebec.
- Jackson, L. J.  
1998 A Hi-Lo Point from Ancaster, Ontario. *Arch Notes (New Series)* 3(3):18.
- Moerschfelder, F.  
1985 Locating the Source of Haldimand Cherts and Related Workshop Sites Along Rogers Creek: An Ongoing Survey in Haldimand County. Manuscript on file, Ministry of Citizenship, Culture and Recreation, London, Ontario.
- Murray, A.  
1997 The Ageing Maple Site: The Importance of Being Small. In *Preceramic Southern Ontario*, edited by P. J. Woodley and P. Ramsden, pp. 59-63. Occasional Papers in Northeastern Archaeology No. 9. Copetown Press, Dundas, Ontario.
- Parker, L. R.  
1986a Haldimand Chert and its Utilization During the Early Holocene Period in Southwestern Ontario. Unpublished Master's Thesis, Department of Anthropology, Trent University.
- 1986b Haldimand Chert: A Preferred Raw Material in Southwestern Ontario During the Early Holocene Period. *KEWA* 86(4):4-21.
- 1997 The Fitzgerald Site: A Non-Meadowood Early Woodland Site in Southwestern Ontario. *Canadian Journal of Archaeology* 21:121-148.



Smith, D. G., and G. W. Crawford

1997 Recent Developments in the Archaeology of the Princess Point Complex in Southern Ontario. *Canadian Journal of Archaeology* 21:9-32.

Timmins, P. A.

1995 Stelco 1: A late Paleo-Indian Hi-Lo Site in the Region of Haldimand-Norfolk, Ontario. *KEWA* 95-5:2-22.

Woodley, P. J.

1997 The Witz and Koeppel II Sites, Ancaster, and the Hi-Lo Occupation of Southern Ontario. In *Preceramic Southern Ontario*, edited by P. J. Woodley and P. Ramsden, pp. 149-171. Occasional Papers in Northeastern Archaeology No. 9. Copetown Press, Dundas, Ontario.